

des algues gélatineuses, à des lichens, soit encore à du suc gastrique, à des mélanges de zoophytes, de frai de poisson, ou à des mucus*. Il est constaté aujourd'hui que les nids comestibles d'hirondelles sont formés par une substance muqueuse d'une remarquable abondance, mucus tout spécial secrété au temps des amours de ces petits oiseaux."

The *Collocalia nidifica* breeds in the Sikhim Himalaya, which is *rather* too far from the sea to permit of any theory that necessarily connects its nests with any product of the ocean.

Calcutta, March 31, 1860.

XLII.—Review of M. O. DES MURS'S 'Oologie Ornithologique'†.

THAT a man with but one idea is a nuisance, is an axiom which only requires time to ripen into a proverb. In spite therefore of the agreeable impression which some of M. Des Murs' previous labours had given us, we confess to having taken up his recent publication in a spirit by no means favourable to what, as we gathered from the title of the work, we expected to find were our author's doctrines. How far a further acquaintance with them has induced us to modify our opinion, we leave our readers to discover from the following remarks.

Few writers have ridden their hobbies more unmercifully than systematizers in Natural History. In Ornithology, indeed, there is hardly any portion of a bird's organization which has not been by some one or another made the basis of classification, and announced to be the real key to the comprehension of the order of creation, and the only means of discovering the much-desired *ultimus finis*—the system of Nature. Beaks and claws, the scutellation of tarsi and the superposition of feathers, the bones of the palate and the bones of the sternal apparatus, the arrangement of the muscles of the trachea and the structure of the alimentary canal, the insertion of the quills and the set-

alimenti tenacem quandam materiam colligunt, sive ea balænarum seu aliorum piscium sit semen, ex qua suos nidos ædificant."

* Voyez les 'Comptes rendus de l'Académie des Sciences,' 1859, p. 521.

† Traité général d'Oologie Ornithologique au point de vue de la Classification. Par O. Des Murs. Paris: Klincksieck, 1860.

ting-on of the hallux, have all been respectively taken up, and perhaps we may say abandoned,—broken reeds which pierce the hands of those who lean thereon. To the number of these *μονοπῶλοι* must be added the students in the school of Transcendental Anatomy, and the believers (of whom the race seems to be fast becoming extinct) in the once loudly praised circular system. It would therefore seem to be a difficult matter to propose any new theory of classification formed from an original point of view. Yet we believe that this much is due to M. Des Murs, that, though many ornithologists may have taken into consideration instances where oology seems to support or dispute their inferences, no one had hitherto attempted laboriously and conscientiously to accumulate a collection of facts, such as is contained in the volume we are reviewing, with the single and undivided purpose of grounding upon them a systematic scheme.

We deem it right thus early to bespeak for M. Des Murs' treatise the careful attention of our readers; but, on the other hand, it has so lately come into our possession, that we must acknowledge that we have not had time to bestow the investigation we should have wished on the multitude of observations—each of which of course requires individual and close consideration—contained in its pages. We must therefore deal with the work in more general terms, and, where we can do so, let our author be his own spokesman.

First as to M. Des Murs himself a few words may not be unacceptable; for such is, unfortunately, the deplorable indifference of many ornithologists in this country to the labours of their foreign brethren, that to some of our readers his very name may be new. For the past seventeen years he has been a constant contributor to M. Guérin-Méneville's journals, chiefly on matters connected with that of the work under our review, and, while at the same time he has edited the ornithological portion of the narratives of several of the scientific expeditions undertaken by his countrymen in various parts of the world, he has, single-handed, produced a book—the '*Iconographie Ornithologique*'—a worthy sequel to the well-known series of plates of Buffon and of Temminck.

To come nearer to our immediate subject, M. Des Murs also formed a cabinet of birds' eggs, which is stated to have contained specimens of the eggs of upwards of 800 species. This was, some years since, purchased by Dr. T. B. Wilson, and, with that gentleman's usual liberality, presented to the Academy of Natural Sciences at Philadelphia, where it now forms the nucleus of one of the most extensive collections of these interesting objects in existence. M. Des Murs has thus deservedly earned for himself the reputation of being one of the most experienced of living oologists, and consequently his opinions on the subject of which he treats in the work before us are entitled to great weight.

With these preliminary remarks, we will now endeavour to give, as succinctly as possible, an analysis of the '*Oologie Ornithologique*.' After a few pages of preface and introduction, we are presented with a compendious bibliography of Oology—a study we perfectly agree with our author as having barely escaped from infancy. "*Comme science, ou comme complément de la science ornithologique, l'oologie est presque entièrement à créer*" (Intro. p. xvi.). While our best thanks are due to M. Des Murs for the ample catalogue of ornithological works which he has furnished to us, we must, nevertheless, take the liberty of questioning one of his assertions, and of claiming for a fellow-countrymen of our own the honour of being the first egg-collector, which he assigns to the Comte de Marsigli. Our author states that "*les collections oologiques ne se font jour que vers la première moitié du xviii^e siècle*." Now it is perfectly certain that more than fifty years previously, the immortal author of the '*Religio Medici*' and the '*Enquiries into Vulgar Errours*,' Sir Thomas Browne, had assigned a place in his cabinet of rarities to a collection of birds' eggs. The delightful Diary of John Evelyn duly records the fact, that in October 1671 its accomplished writer journeyed "in my Lord Henry Howard's flying chariot" from the sloping lawns of Euston to visit the good city of Norwich; and the virtual founder of the Royal Society especially mentions among the sights he saw there, this evidence of what perhaps appeared to him only as a school-boy predilection of the worthy knight*.

* Evelyn's Diary, Bray's edition, 1850, vol. ii. p. 66.

Next in order in M. Des Murs' treatise, and forming its second part, comes the "Determination of Oological Characters," doubtless the most difficult part of his task, taking into consideration the wide variation to which specimens, produced by the same species—nay, the same individual bird—are subject. In this division our author lays down as the three principal points to be attended to in the examination of eggs,—1st, their form; 2ndly, the nature of their shell; and, 3rdly, the colours which distinguish them. With respect to the first of these points—*Form*—M. Des Murs seems to consider it as of most importance, and therefrom separates eggs into six categories, which he thus denominates :—

- (1.) The *spherical*, best exemplified by those of the Owls.
- (2.) The *oval*, under which he includes those of the Diurnal Raptores.
- (3.) The *cylindrical*, as illustrated by the eggs of the *Pteroclinæ*.
- (4.) The *ovate*, of which those of the *Phasianidæ* serve as a familiar instance.
- (5.) The *ovoïconical*, which comprehends by far the greater number of the eggs of the *Scolopacidæ*.
- (6.) The *elliptical*, as shown in the case of the genus *Podiceps*.

Reserving, for the present, all criticism upon the nomenclature proposed, we agree with the author, that under one or another of these heads may be fairly enough comprised the egg of every known species of bird, though it will be understood that we are compelled to restrict the illustration of the definitions to the most meagre limits, and to omit the many exceptional cases which will readily occur to the veriest tyro in oology. We must, however, add here one remark of M. Des Murs (pp. 65, 66) :—

“ Si l'on veut, après cela, examiner d'une manière générale et un peu plus méthodique, la répartition de ces formes dans la classe des Oiseaux, on en aura une idée par le tableau suivant, dressé, pour exemple, conformément à l'enseignement de M. Isid. Geoffroy Saint-Hilaire :—

“SEMI-PENNES (exceptionnellement <i>elliptique</i>)			} ovée . . .	} ovulaire.	} sphérique.”
RAPACES					
PASSEREAUX (except. <i>ovulaire</i>)					
GALLINACÉS (except. <i>cylindrique</i>)					
ECHASSIERS (except. <i>ovulaire</i> et <i>ovée</i>)..ovoïconique					
PALMIPÈDES (except. <i>ovoïconique</i> et <i>elliptique</i>) . .					
IMPENNES					

Our author then proceeds to consider Monstrosity of Form, and the causes to which some of its very curious effects are due. We are sorry we have not space here to give even an outline of what he says on this part of the subject, treated as it is in a very masterly manner; and we must pass over for the same reason the interesting section respecting the disproportion existing between the size of certain eggs and that of their parents.

To the Nature of the Shell, or, as it is commonly termed by collectors in this country, its “Texture,” M. Des Murs devotes several pages, and arranges eggs with regard to this character into seven “series,” which we will attempt to illustrate as before by a few well-known instances.

1st. Eggs with a *glossy* surface, as shown in *Alcedo*.

2nd. Eggs with a *smooth* shell, but less glossy than the preceding,—a group which embraces nearly all the *Passeres* and *Gallinæ*.

3rd. Eggs of a substance *dull and uniform*, as those of the Rapacious birds.

4th. Eggs with a surface *granulated or roughened* (“*piquetée*”), as in those of the Ostrich.

5th. Eggs whose shell has a *greasy or oleaginous* appearance, as those of the Ducks.

6th. Eggs whose shell, greasy as in the last, is besides *varied with calcareous protuberances*, of which the Grebes offer a familiar example.

7th. Eggs covered with a *cretaceous film or sedimentary pulp*, such as in the *Pelecanidæ*.

A lengthened dissertation on Colour, as an oological character, succeeds, in accordance with our author’s plan. Its value is not to be underrated, though perhaps too much importance

has hitherto been assigned to it by those writers who have ventured on this, by far the most popular, branch of the science.

“Cette partie de l’Oologie n’est pas la moins agréable à étudier ; elle n’est pas non plus la moins difficile. Il est impossible, si l’on n’en a vu une suite nombreuse, de soupçonner la richesse et la variété des teintes qui ornent cette enveloppe, en apparence si grossière et si insignifiante. Une collection de ce genre est réellement digne de figurer à côté des somptueuses collections de papillons et d’oiseaux dont sont remplis les cabinets d’histoire naturelle. Aussi nous ne doutons point qu’à mesure que les observations, en se multipliant sur ce sujet intéressant, en découvriront toute la valeur et le mérite, les amateurs, et même les savants, ne finissent par devenir curieux de posséder les œufs de toutes les espèces d’oiseaux connues.”— (pp. 140, 141.)

An attempt is then made to establish divisions in the general colouring of eggs, as has been already done in the cases of their shape and texture. We are not warranted, however, in saying that this part of the subject is treated so happily as those on which we have previously remarked. Indeed, its inherent difficulties perhaps render success impossible. Far more satisfactory to our mind are the sections relating to the origin of the colouring matter, the influences of food, climate, and incubation upon it, and to the oft and rashly-asserted correspondence between the colour of the egg and of its parent. In these matters, and as regards the physiological and chemical inquiries which the question naturally entails, M. Des Murs appears to be quite at home, but lack of space prevents our following him into details. We have only room for his summary of the principal propositions which he considers he has established :—

“1°. Que si la forme des œufs était généralement ovée, elle subissait cependant des altérations qui se retrouvent constantes dans certains groupes ; par exemple : la forme ovale chez les Tinamous, la forme elliptique chez les Grèbes, les Cormorans et les Pélicans, la forme ovoïconique chez les Pingouins et les Guillemots, et la forme cylindrique chez les Mégapodes et les Gangas.

“2°. Qu’il n’existe pas un seul oiseau aquatique dont les

œufs soient revêtus d'une coquille luisante et lustrée, cette qualité n'étant propre, dans des degrés infiniment variés, qu'aux œufs des oiseaux terrestres.

"3°. Que la couleur des œufs ne varie en aucune manière, dans la même espèce, d'un climat à un autre.

"4°. Que le mode de coloration, tout en variant indéfiniment d'une espèce à une autre, est cependant constant, dans plusieurs groupes, chez les genres ou les espèces qui les composent : ainsi, blanc chez les Pigeons, uni et sans taches chez les Faisans et chez les Tinamous.

"5°. Que la forme des taches, à part la couleur de celles-ci, est également constante chez plusieurs groupes, par exemple les Bruants, les Quiscales et la plupart des Ictéridés." (pp. 188, 189.)

We have dwelt thus at length on this preliminary portion of M. Des Murs' work, because we have wished to convey to our readers a distinct notion of such of his ideas as are most likely to be novel to them. Our limits will oblige us to hurry over their application to Oology, though this is the more useful part of the subject ; indeed, we approach the practical rendering of our author's theories with some reluctance. What becomes of the results of all his investigations if any of them be founded on an insufficient basis ? Are the statements on which he relies to be safely taken as unquestionable facts ? Are all the specimens from which he has formed his opinions thoroughly to be depended upon as genuine ? Will they admit of a severe and impartial examination in detail ? We regret very much to declare that, looking at the published Catalogue of the Philadelphian Cabinet*, of which, as we before said, M. Des Murs' collection now forms part, the odour of a grave suspicion reaches us. What are we to think of specimens from this (his former) collection (and we take only two out of several instances we might select) of *Turdus iliacus* and *Totanus semipalmatus*, to which "France" is assigned as a locality,—and yet such are entered in Dr. Heermann's list ? Does any oologist pretend that the nidification in that country of either of the species just mentioned

* Catalogue of the Oological Collection in the Academy of Natural Sciences of Philadelphia. By A. L. Heermann, M.D. March 1, 1853, pp. 36.

is not a matter of the highest improbability? We are willing to concede that the majority of our author's statements are well-grounded, that in most cases he has formed his opinions from specimens which are genuine; but a chain of evidence is no stronger than its weakest part, and if we find a flaw in even a few of the links, can we place confidence in all the remainder without being able to test them? Whatever may be the value finally attached to oological characters, we are ready to assert it again and again, that they can be safely used in a matter of science *only when the specimens from which they are drawn are completely free from doubt, through the care taken by the collector to identify and authenticate them.*

It is but justice to M. Des Murs to state, that he is perfectly free from any disposition to veil the present imperfect state of oological knowledge. Indeed, with a frankness most fair and most commendable, he avows time after time his unavoidable ignorance of the eggs of many most important forms. The attentive reader of his work will soon perceive how wide a field remains still for future investigators. Nothing whatever seems to be known of the oology of whole groups, such as *Neomorpha*, the *Paradiseidæ*, and other interesting birds. The progress of the study, taken up as it now is by so many accurate observers, and pursued by them with so much zeal, will doubtless necessitate a certain amount of modification in our author's classified arrangement. In fact, from this very cause, we find him obliged to publish, under the date of the present year, a revised '*Systema Oologicum*' (p. 529), differing in some degree from, and in many respects superior to, that printed only a few months previously (p. 195). In this scheme, by judicious typographical arrangement, it can be seen at a glance what are the chief innovations he has deemed it advisable to make in the arrangement of former systematists. To enumerate them would be to extend the limits of this article far too much; they consist rather in the grouping and order than in introducing new divisions, though instances of the latter kind of alterations are not wanting. We must content ourselves with recommending to all who busy themselves with classification, a careful study of his application of oological characters in forming a system, and only remark here upon a very

few points which may have special interest to some of our readers.

Speaking of the group *Turdinæ*, M. Des Murs says (p. 292), "Parmi les œufs d'un vert luisant et tiqueté de noir, nous ne connaissons encore que l'œuf des *T. musicus, iliacus*, d'Europe, et *densirostris*, des Antilles;" and then a little further on (pp. 292, 293), "D'après ce qui précède, on pourrait créer, pour celles des espèces du genre *Turdus* que nous prenons pour Grives proprement dites, par leur œuf, un genre sous le nom de *Iliacus*, que nous proposons pour les *T. musicus, iliacus* et *densirostris*, et pour les autres espèces qui viendront s'y joindre par la suite, et réserver la dénomination générique de *Turdus* pour toutes les espèces dont l'œuf est analogue à celui du *T. merula*."

Now we cannot but look upon this suggestion of our author's as a singularly unfortunate one. We have already mentioned the suspicion excited in our mind by the entry in the Philadelphian Catalogue of eggs from M. Des Murs' collection to which the name of *Turdus iliacus* is applied, while *France* is given as the locality whence they come. This suspicion is converted, by the passage above quoted from our author, into a pretty strong belief that he has been entirely mistaken with regard to these examples, and that he can never have seen genuine specimens of the Redwing's eggs. Few oologists in England now require to be told that this bird does not, as was asserted by Nilsson, and after him by Temminck, Degland, and others, lay blue eggs spotted with black. The additional evidence on the subject which Mr. Hewitson was enabled, in the last edition of his work, to give ('Eggs of Brit. Birds,' 3rd ed. p. 87), entirely sets the question at rest, and would, we are sure, have saved M. Des Murs from this error, had it not escaped his notice, for he is particularly *reconnaissant* of the services rendered to oology by its English votaries. Nor can we hardly think that, on the strength of the agreement in the style of colour of their eggs, birds of such different structure as our own Song Thrush, and the *Turdus densirostris* of Vieillot, should be associated together. Indeed the latter has for some time been separated from the genus *Turdus*; and last year Mr. Selater (Proc. Zool. Soc. 1859, p. 335) deposited it in a new genus (*Margarops*) along with two other

undoubtedly allied species inhabiting the same region, one of which certainly lays a blue, though spotless egg, already figured in this Journal (*Ibis*, 1859, Pl. XII. fig. 8). We trust therefore that the genus *Iliacus*, as established by M. Des Murs, will receive no support from naturalists.

We do not wish to dwell upon one or two such obvious *lapsus calami* as that (p. 206) wherein the eggs of *Pandion* are said to be of a "couleur blanche, et sans tache," or the statement (p. 508) that only one of the three known species of *Bombycilla* is found in the New World; but we cannot refrain from recording our total dissent from the assertion of M. Des Murs (p. 632) that the Brambling (*Fringilla montifringilla*) is "par son œuf un véritable *Zonotrichia*." In reality, we assure our readers, there is only the most remote resemblance between the two eggs. That of the Brambling agrees entirely in character with those of the other true *Fringillæ*, such as *F. cœlebs* and *F. spodiogenia*, while that of one very normal species of *Zonotrichia* (*Z. pileata*), which has already been described in this Magazine (*Ibis*, 1859, p. 18) by a most accurate observer, has, as entirely, another appearance. We fear that, as in the case of the Redwing, so in that of the Brambling, M. Des Murs has not had the advantage of seeing genuine eggs, from which to draw his conclusions. We have no reason to suppose that he is not fully aware that no real progress can be made in oology except through the attainment of eggs which may have been thoroughly identified as to species, and well authenticated as to specimens. When such are before him, even the hardest hobby-horse rider may be suffered to pursue his headlong course in safety. The worst that can happen to him is to be stopped suddenly by some insuperable obstacle, when he must retrace his steps; but his beast, being sure-footed, will not bring him to grief. If, on the other hand, he trusts himself outside a hack without a warranty, we all know what is likely to be the consequence. We therefore do not complain of M. Des Murs exercising caution in hesitating to credit (p. 501) the account given in the '*Ibis*' (1859, p. 469) by Mr. Alexander S. Taylor of a supposed egg of *Cathartes californianus*, which has been figured in our last Number; but it should be remembered that that gentleman is possessed of unusual acumen, and that he

has before shown himself to be well on his guard as to the reception of evidence.

It may be expected of us that we should here sum up in a few words our opinion of the 'Oologie Ornithologique;' but the task is not an easy one. We have thought it our duty to express our dissent from some of our author's opinions, and even to question some of his assertions; but of the value of the work as a whole there can be no doubt, even if it be only regarded as laying the foundation of a future superstructure. In terseness and perspicuity of style, M. Des Murs successfully equals the neatest and most lucid of his country's writers. He is also very considerate in urging the adoption of his theories, and we notice with pleasure his willingness to give English oologists their due credit. We must not omit to add likewise that the work contains a Catalogue of the Birds of Europe, which is likely to be very useful at the present time, when it is becoming customary to include among the number any chance stragglers, from what part of the globe soever they may arrive. It is needless to say anything in praise of this list further than that it has been compiled "d'accord avec J. Verreaux," one of the highest authorities on the subject. Lastly, let us mention that a careful triple index is subjoined, which contributes largely to the practical use of the work.

That, in future, naturalists must of necessity take Oology into account when investigating the classification of Birds, we regard as inevitable; but we may be permitted to place on record our deliberate conviction that a scheme composed solely with reference to this one branch of ornithology will never lead us to a true comprehension of the system of nature in relation to the class *Aves*. Oology taken alone will prove a guide as fallacious as any of the arbitrary methods of classification to which we have before alluded: combined with other characters, we assert, without fear of contradiction, it will not fail in time to produce an ornithological arrangement as nearly true to Nature as mortals can expect to achieve.

June 1860.